

11 determining the one or more fine-grained estimates based on said set of fine-
12 grained correlations.

1 43. (New) The method of claim 42, wherein determining said set of fine-grained values of
2 interest comprises the steps of:

3 determining a set of initial estimates for said signal parameter;
4 determining, based on a pre-selected confidence level, a plurality of ranges of
5 fine-grained values of interest, wherein each said range corresponds to
6 one said initial estimate; and
7 combining said plurality of ranges to yield said set of fine-grained values of
8 interest.

1 44. (New) The method of claim 43, wherein calculating said set of fine-grained
2 correlations comprises the steps of:
3 selecting one said fine-grained value of interest;
4 determining a subset of coarse-grained correlations from said set of coarse-
5 grained-correlations based on a pre-selected desired accuracy and a
6 type of filter;
7 interpolating said subset of coarse-grained correlations; and
8 repeating the above three steps for all the fine-grained values of interest in said
9 set of fine-grained values of interest.

1 45. (New) The method of claim 44, wherein determining said set of initial estimates
2 further comprises the step of calculating a set of coarse-grained correlation
3 magnitudes.

1 46. (New) The method of claim 44, wherein determining said set of initial estimates
2 further comprises the step of comparing the set of coarse-grained correlation
3 magnitudes with a pre-selected magnitude threshold.

1 47. (New) The method of claim 45, wherein determining said set of initial estimates
2 further comprises the step of determining a highest coarse-grained correlation
3 magnitude.

a/ 1 48. (New) The method of claim 47, wherein determining said set of initial estimates
2 further comprises the step of selecting coarse-grained correlation magnitudes that are
3 within a pre-selected magnitude range of said highest coarse-grained correlation
4 magnitude.

1 49. (New) The method of claim 44, wherein said set of coarse-grained correlations
2 corresponds to a range of coarse hypothesized values for said signal parameter,
3 wherein said range of coarse hypothesized values depends on:

4 an approximate time when said receiver received said received signal;
5 a time uncertainty quantity associated with said approximate time;
6 an approximate position of said receiver; and

7 a position uncertainty quantity associated with said approximate position of
8 said receiver.

1 50. (New) The method of claim 46, wherein said set of coarse-grained correlations
2 corresponds to a range of coarse hypothesized values for said signal parameter,
3 wherein said range of coarse hypothesized values depends on:

4 an approximate time when said receiver received said received signal;

5 a time uncertainty quantity associated with the approximate time;

6 an approximate position of said receiver; and

7 a position uncertainty quantity associated with said approximate position of
8 said receiver.

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1 51. (New) The method of claim 47, wherein said set of coarse-grained correlations
2 corresponds to a range of coarse hypothesized values for said signal parameter,
3 wherein said range of coarse hypothesized values depends on:

4 an approximate time when said receiver received said received signal;

5 a time uncertainty quantity associated with the approximate time;

6 an approximate position of said receiver; and

7 a position uncertainty quantity associated with said approximate position of
8 said receiver.

1 52. (New) The method of claim 48, wherein said set of coarse-grained correlations
2 corresponds to a range of coarse hypothesized values for said signal parameter,
3 wherein said range of coarse hypothesized values depends on:
4 an approximate time when said receiver received said received signal;
5 a time uncertainty quantity associated with the approximate time;
6 an approximate position of said receiver; and
7 a position uncertainty quantity associated with said approximate position of
8 said receiver.

a 1 53. (New) The method of claim 44, wherein calculating said set of fine-grained
2 correlations is based on a band-limited interpolation technique.

1 54. (New) The method of claim 49, wherein calculating said set of fine-grained
2 correlations is based on a band-limited interpolation technique.

1 55. (New) The method of claim 50, wherein calculating said set of fine-grained
2 correlations is based on a band-limited interpolation technique.

1 56. (New) The method of claim 51, wherein calculating said set of fine-grained
2 correlations is based on a band-limited interpolation technique.

1 57. (New) The method of claim 52, wherein calculating said set of fine-grained
2 correlations is based on a band-limited interpolation technique.

1 58. (New) The method of claim 42, wherein determining said set of fine-grained
2 estimates further comprises the step of calculating a set of fine-grained correlation
3 magnitudes.

1 59. (New) The method of claim 58, wherein determining said set of fine-grained
2 estimates further comprises the step of determining a highest fine-grained correlation
3 magnitude.

1 60. (New) The method of claim 59, wherein determining said set of fine-grained
2 estimates further comprises the step of selecting fine-grained correlation magnitudes
3 that are within a pre-selected magnitude range of said highest fine-grained correlation
4 magnitude.

a1 1 61. (New) The method of claim 58, wherein determining said set of fine-grained
2 estimates further comprises the step of comparing said set of fine-grained correlation
3 magnitudes with a pre-selected magnitude threshold.

1 62. (New) In a position determining system, a method for calculating one or more fine-
2 grained estimates, wherein said fine-grained estimates are for a signal parameter, and
3 wherein said signal parameter is for a received signal, the method comprising the
4 steps of:
5 receiving said received signal at a receiver;

6 pre-processing said received signal;
7 obtaining a set of coarse-grained correlations;
8 determining a set of fine-grained values of interest:
9 generating a parametric template representing correlation values associated
10 with said received signal;
11 calculating a weighted square error function by performing a linear regression
12 for each said fine-grained value of interest; and
13 determining said one or more fine-grained estimates based on said weighted
14 square error function.

1 63. (New) The method of claim 62, wherein determining said set of fine-grained values of
2 interest comprises the steps of:
3 determining a set of initial estimates for said signal parameter;
4 determining, based on a pre-selected confidence level, a plurality of ranges of
5 fine-grained values of interest, wherein each said range corresponds to
6 one said initial estimate; and
7 combining said plurality of ranges to yield said set of fine-grained values of
8 interest.

1 64. The method of Claim 63, wherein the step of determining said one or more fine-
2 grained estimates comprises the step of determining a lowest weighted square error
3 value.

1 65. (New) The method of Claim 63, wherein the step of determining said one or more
2 fine-grained estimates further comprises the step of comparing said weighted square
3 error function with a pre-selected error threshold.
